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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/537,896  
Filing Date: June 07, 2005  
Appellant(s): EARDLEY, PHILIP L

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David J Zibelli(36,394)  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 01/04/2010 appealing from the Office action mailed 05/04/2009 and the advisory action mailed 10/23/2009.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

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**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

Karino	US Patent 7,327,671	02/2008
O'Neill et al.	WO 01/06732	01/2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

Claims 1-3 and 5-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Karino et al. (U.S. Patent No. 7,327,671).

With respect to claim 1 and 11, Karino teaches a method of routing packets in a packet network, said packet network including a chain of packet nodes, said chain comprising first and second access nodes for communicating with one or more mobile

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nodes (Fig. 17 BS2 and BS3), and one or more intermediate packet nodes, said one or more intermediate packet nodes providing a path interconnecting said first and second access nodes, (Fig. 17 R4, R2 and R5), said method comprising the steps of: installing, in said intermediate packet nodes, first routing data defining a first routing path in one direction along said chain to a mobile node via said first access node (Fig. 17 routing path R2->R4->BS2; Col. 32 line 23-29 original communication route), and second routing data defining a second routing path in the opposite direction along said chain to said mobile node via said second access node; (Fig. 17 routing path R2->R5->BS3; Col. 32 line 23-29 alternate communication route), operating each of said intermediate packet nodes to: determine, on receipt of a packet destined for said mobile node, whether said packet is from another node on said chain or not; (determine branch point, col. 33 lines 22-28; if the node is the branch point then it received a packet not on the chain, a router can be in unicast or bicast mode unicast indicates that the mobile host is in a chain and bicast indicates not in chain Col 33 lines 43 ), and a) if the packet is determined to be from a node not on said chain, copying the packet and routing said copy along one of said routing paths and routing said packet along the other of said routing paths; (Fig. 17 (2) sends packet one direction and (5) copy in the other direction), and b) if the packet is determined to be from another node on said chain, route said packet along said chain only in the direction in which it is currently traveling. (Fig. 17 (3) sends packet in currently traveling direction).

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With respect to claim 2, Karino teaches wherein said packet (s) include (s) a unique address of the mobile node. (col. 2 line 1 packet addressed to mobile node (MH)).

With respect to claim 3, Karino teaches wherein said unique address is the same before and after a handover of the mobile node from the first access node to the second access node. (col. 33 lines 10-12, The bicast router adds the received packet addressed to the mobile host MH but does not change the MH address in the packet).

With respect to claim 5, Karino teaches wherein said first routing data are installed prior to the handover of said mobile node from said first access node to said second access node. (Fig. 17 routing path R2->R4->BS2; Col. 32 line 23-29 original communication route installed before alternate communication route R2->R5->BS3).

With respect to claim 6, Karino teaches wherein said second routing data include data indicating that said second routing data relates to the handover of said mobile node from said first access node to said second access node. (col. 33 lines 22-28, branch point receiving message defines alternate communication route and is indicative of a handoff between originally communication route and alternate communication route).

With respect to claim 7, Karino teaches wherein said second routing data are installed in response to a routing control message generated at said second access node and transmitted to said first access node. (Col. 30 line 60-col. 31 line 45, adjacent communication establishing message from BS3 to BS2).

With respect to claim 8, Karino teaches wherein said first access node and said second access node are wireless access nodes and wherein said packets are sent to and received from said mobile node via a wireless transmission system. (Fig. 17 wireless base stations BS2 and BS3 communicating to mobile node MH via wireless transmission, shown as (4) and (7)).

With respect to claim 9, Karino teaches a packet network including a chain of packet nodes, said chain comprising: first and second access nodes for communicating with one or more mobile nodes; (Fig. 17 BS2 and BS3), and one or more intermediate packet nodes providing a path interconnecting said first and second access nodes ; (Fig. 17 R4, R2 and R5), said intermediate packet nodes having installed therein first routing data defining a first routing path in one direction along said chain to a mobile node via said first access node (Fig. 17 routing path R2->R4->BS2; Col. 32 line 23-29 original communication route), and second routing data defining a second routing path in the other direction along said chain to said mobile node via said second access node (Fig. 17 routing path R2->R5->BS3; Col. 32 line 23-29 alternate communication route), each intermediate packet node being arranged in operation to determine, on receiving a packet destined for said mobile node, whether said packet is from another node on said chain or not (determine branch path, col. 33 lines 22-28; if the node is the branch point then it received a packet not on the chain), and a) if the packet is determined to be from a node not on said chain, copying the packet and routing said copy along one of said routing paths and routing said packet along the other of said routing paths; (Fig. 17 (2) sends packet one direction and (5) copy in the other direction), and b) if the packet is

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determined to be from another node on said chain, route said packet along said chain only in the direction in which it is currently traveling. (Fig. 17 (3) sends packet in currently traveling direction).

With respect to claim 10, Karino teaches packet node for use in a packet network according to claim 10 (*sic.* [9]). (Fig. 17 R4, R2 and R5),

### ***Claim Rejections - 35 USC § 103***

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karino as applied to claim 3 above, and further in view of O'Neill et al WO 01/06732.

With respect to claim 4, Karino teaches all the elements as applied to claim 3 above except for the operating steps 4a, 4b and 4c. However, O'Neill operating each node in the packet network: a) to associate a routing value with said unique address; (Fig. 26 own height), b) responsive to the receipt of said packet at said node to forward said packet towards another node having a lower routing value associated with said unique address; (Page 13 lines 18-19, packet is directed from higher node to lower node), c) responsive to the creation of a wireless link between a mobile node having said unique address and said node to reduce said routing value associated with said unique address to a lower value than that associated with said unique address by the other nodes in said network (Page 18 lines 15-16, when a mobile node changes BS affiliate it decreases its height value relative to the other nodes). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains to modify the handoff method and system of Karino



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with the node level information tracking of O'Neill in order to more effectively operate a wireless system during handoffs.

### **(10) Arguments**

Regarding the following grounds of rejection:

#### **A. Claim 11 is Directed to Statutory Subject Matter Under 35 USC § 101.**

The appellant argues on page 11 of the arguments that the 101 rejection and related specification objection should be withdrawn in light of the appellant's amendments to the specification. The examiner agrees that the amendments to the specification are sufficient to overcome the examiner's rejection. However at the time of the mailing of the advisory office action the application was not in condition for allowance. Regardless the examiner withdraws the 101 rejection.

Regarding the following grounds of rejection:

#### **B. Claims 1-3 and 5-11 Are Not Anticipated Under 35 USC § 102 by Karino.**

The appellant argues that Karino does not teach the aspect of determining whether a packet is from a node on said chain and a) if the packet is not from another node on said chain it copies forward the packet along the routing path of said chain and along another path., and b) if the packet is from another node on said chain routing the packet along routing path of said chain without routing it to another path. The appellant supports such an argument stating on page 13 that Karino never determines whether

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the packet is from another node on said chain or not but instead makes its routing decision based on whether it has received a bicast release message or not.

The examiner disagrees with the appellant because the fourth embodiment as described by Karino (Karino Cols 29-34) teaches the limitations of the independent claims (as described in the final office action). The examiner interpreted the determining whether a packet is from a node on said chain, as determining at a node whether the proper path for a packet is to travel is a single chain of nodes or if the proper path requires a the packet to be bicast (2 paths after R2 determine it is proper an available for bicast Col 31 Lines 19-23). Such an interpretation was made by the examiner because it is clear from the actions of a) and b) ( or more specifically the need to bicast for situation b)) that the purpose of the determination is to determine if the packet should only travel in one path or needs to be copied and propagated on two paths(bicast).

Karino describes a system for determining when an intermediate router should be a bicast router or a unicast router. The branch point retrieving message (Col 33 lines 22-28) when received at a router such as R2(Figure 17) signals the router to determine if it is the proper branch point for a packet and whether the message should be forwarded to another router to determine if it is the branch point (see Col 30 Line 60- Col 31 Line 32 describing position recording message sent from Mobile host to router R4 which then sends the position recording message and branch point retrieving message to R2 because R4 has determined that it can not be a branch point). The router at R2, based on receiving the branch point retrieving message(sent by R4 (Ccol

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31 Lines 3-12) and subsequently determining that it is the proper branch point, becomes a bicast router and sends any packets destined for the mobile host on the original path and on a secondary (prospective) path (Col 31 Lines 19-23).

In the fourth embodiment situation a) corresponds to any router such a R4 that has determined after receiving a position recording message and/or a branch point retrieving message that the path of a packet should be unicast. Situation b) corresponds to determining that the path of a packet should be bicast (because the router is the proper branch point Karino, Col 33 Lines 10-21). In addition, receiving the bicast release message also corresponds to situation b) because the purpose of the bicast release message is to turn a bicast router into unicast router(Col 33 Lines 53-63). The bicast release message also inherently teaches situation a) because receiving a bicast release message implies that the router is a bicast router and that at some point it time it made the determination that the path of packet should be bicast(as was done during the original determination of the proper bicast router among R4 and R2 Col 30 Line 60 – Col 31 line 23). Therefore the examiner's rejection is proper because it was based upon a reasonable interpretation of the claims and is taught by embodiment 4 of Karino.

The applicant further argues that Karino does not operate each intermediate node to make the required determination because the mobile host of Karino, based upon the appellant's interpretation of the final office action is equivalent to the mobile nodes of the appellant and therefore can not be in chain. The examiner assumes that the appellant is referring to the following portion of the final rejection of claims 1 and 9

**“determine, on receipt of a packet destined for said mobile node, whether said packet is from another node on said chain or not; (determine branch**

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**point, col. 33 lines 22-28; if the node is the branch point then it received a packet not on the chain, a router can be in unicast or bicast mode unicast indicates that the mobile host is in a chain and bcasts indicates not in chain Col 33 lines 43),:**

The recited sections of claim 1 and 9 as described on ¶2 page 14 of the arguments assert that the claims recite language that prevents the mobile host from being part of a chain. The examiner disagrees because the examiner never equated the mobile host with the mobile nodes of the appellant. The examiner merely described that the mobile host under conditions when there is a unicast router is in a chain because there is only one path, and is not in a chain when the router is a bicast router because there are two paths for a packet to travel. Rather it is apparent that the mobile host of Karino is equivalent to the mobile host of the appellant as described in page 1 of the appellant's specification since they have the same name. While the mobile host of Karino is not equivalent to the intermediate and/or access nodes of the appellant, the mobile host can still be in a chain or not in a chain. The mobile host is in a chain when it is the endpoint a single path propagation (when the path contains no bicast routers). The mobile host is not in a chain when it is the endpoint of a multiple path propagation (when the path contains bicast routers, the path is treelike, see Figure 17 showing path lines out of R2).

The appellant argues on page 15 of the arguments that Karino does not teach determining at each intermediate node whether the said packet is from another node on said chain or not, because the branch point retrieving message of Karino is not a packet destined for said mobile node. The examiner has never equated the branch retrieving packet to be equivalent to the data packets that are sent to the mobile host. The branch

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retrieving packet is clearly part of the method by which the routers of Karino determine whether they can be a branch point (equivalent to intermediate router of the appellant, see appellant's Figure 4 IR1) or can not be a branch point (Edge router of the appellant, see ER1 of Figure 4).

The appellant argues on page 16 of the arguments that the examiner has improperly read language into the claims that the claims do not require. The examiner disagrees because claim 1 recites "determine, on receipt of a packet destined for said mobile node, whether said packet is from another node on said chain or not". The specification and claim do not provide any further description on what is meant by determining whether a packet received is from another node in said chain. The determination as recited further in claim 1 is linked by the word "and" to the functions of a (copy and forward along two paths) and b) (no copy and forward along original path). Therefore it is clear that these limitations relate to routing packets to mobile hosts in a mobile network. This led the examiner to logically think that the appellant's invention was describing the routing of packets when a mobile host is transitioning between the range of two base stations (access nodes), which are the methodologies as described by Karino (with embodiment 4 being the most equivalent to the appellants claims). By giving a broad but reasonable interpretation of the claims the examiner has done the opposite of what the appellant argues and has "not" improperly reading limitations into the claim.

The appellant on page 17, further argues that the Karino does not teach situation a), the copying of a packet and forwarding the copy with the original packet along a

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routing path and along another routing path, because the bicast release message causes the routers to only transfer the packet along the primary communication path.

The examiner disagrees with this argument because the bicast release message is part of the determination for situation b) of the appellant not a). To reiterate what has already been discussed, the bicast release message causes the router to make the determination that the path of a packet should only follow a single chain.

Regarding the following grounds of rejection:

**C. Claim 4 is Not Obvious Under 35 USC § 103 by Karino in view of O'Neill.**

The appellant argues that O'Neill taken alone or in combination fails to disclose the limitations of claim 4. The examiner disagrees since the referenced portions of O'Neill as recited in the final action addresses each and every limitation of claim 4 not taught by Karino (O'Neill, a) (Fig. 26 own height), b) (Page 13 lines 18-19,), c) (Page 18 lines 15-16). Thus it would have been obvious to combine Karino and O'Neill since both relate to handoffs in mobile networks.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/TOM Y CHANG/

Examiner, Art Unit 2456

/KEVIN BATES/

Primary Examiner, Art Unit 2456

/Rupal D. Dharia/

Supervisory Patent Examiner, Art Unit 2400